REMARKS/ARGUMENTS

The Applicant respectfully requests further examination and reconsideration in view of the amendments above and the comments set forth fully below. Claims 1-3, 5, 8, 9, and 37-39 were pending. Within the Office Action, Claims 1-3, 8, 9, and 37-39 have been rejected. Claim 5 is objected to. By the above amendment, Claim 8 is amended. Accordingly, Claims 1-3, 5, 8, 9, and 37-39 are currently pending in the application.

Claim Amendments

By the above amendment, Claim 8 is amended to replace "a first plurality of fuses" with "a first plurality of programmable data storage locations." As the claim limitation "the first adjustable capacitor array having an effective capacitance value adjustable through use of a first plurality of programmable data storage locations, the first plurality of programmable data storage locations programmable through a serial control interface" has already been considered in the context of the currently pending Claim 1, the amendment to Claim 8 to include similar claim limitation as already considered Claim 1 does not constitute new matter, nor raise new issue. As such, the amendment to Claim 8 should be considered.

Rejections Under 35 U.S.C. §103:

Within the Office Action, Claims 1-3, 8, 9, and 37-39 have been rejected as being unpatentable over US Patent Application Publication No. 2004/0116096 to Shen (hereinafter "Shen") in view of US Patent Application Publication No. 2003/0193373 to McCarthy et al. (hereinafter "McCarthy") and further in view of US Patent No. 6,014,554 to Smith (hereinafter "Smith"). Applicant respectfully disagrees.

Shen teaches an RF communications receiver which permits greater integration on standard silicon chips and consumes less power than previous receivers. Also, Shen teaches a new method for using a tracking polyphase filter for image rejection of variable intermediate frequencies, wherein the method allows for reduced sensitivity to resistor and capacitor manufacturing variations and allows for the polyphase filter response to be enhanced compared to the prior art. [Shen, Abstract]

McCarthy teaches a programmable capacitive network for use in a tunable resonant circuit that is particularly useful in the tuning of a voltage controlled oscillator formed on a substrate, such as a semiconductor substrate or the like. The programmable capacitive network includes a plurality of capacitive elements. An interconnected network of voltage gate elements and fuse elements are interconnected with the capacitive elements to selectively connect one or

more of the plurality of capacitive elements in the resonant circuit in response to at least one program control signal. In accordance with one embodiment, the voltage gate elements are diodes. [McCarthy, Abstract]

Smith teaches A method and apparatus for tuning an analog filter that is embodied in a larger circuit in which the analog input signal to the filter is, at some point prior to the filter, in digital form. The digital version of the input signal to the filter is stored in memory. The output signal from the filter corresponding to the stored input signal is digitized and compared to the stored digital input signal to the filter. Based on the known input signal and the known desired frequency characteristics of the filter, the desired output signal is a known quantity. If the actual output signal differs from the expected output signal, the filter is tuned accordingly. The process may be performed continually on all input data or on discrete sections of the input data. [Smith, Abstract]

As admitted to in the Office Action, Shen does not disclose a programmable filter with an arrangement as claimed. Instead, McCarthy is cited as teaching a first filter stage, the first filter stage including a first LC resonator and including a first adjustable capacitor array coupled to the first LC resonator. [Office Action, pages 2-3] It is further admitted to in the Office Action that the modified programmable filter of Shen and McCarthy disclose that the capacitor switching matrix can be programmed to select a capacitor to enable/disable but not explicitly disclose that the capacitor matrix can be programmed by data storage location. Instead, Smith is cited as disclosing a capacitor matrix that can be programmed by data storage location. [Office Action, page 3] The Applicant respectfully submits that the proposed combination does not teach the limitations as claimed.

Claim 1 is directed to an intermediate frequency filter for use in an integrated circuit, comprising a first filter stage, the first filter stage including a first LC resonator, and the first filter stage further including a first adjustable capacitor array coupled to the first LC resonator, the first adjustable capacitor array having an effective capacitance value adjustable <u>through use of a first plurality of programmable data storage locations</u>, the first plurality of programmable data storage locations programmable through a serial control interface.

In contrast, McCarthy teaches that the capacitive elements 110, 115, 120 in Figures 1A and 1B, and capacitive elements 202-212 in Figure 2, are adjusted through the use of <u>a single</u> programmable input line 191. [McCarthy, paragraph 14 and 21, Figures 1A, 1B, 2]

Even if it is proper to apply programming via data storage locations of Smith, as proposed, only a single programming line 191 of McCarthy is available such that only a <u>single</u> programable data storage location is used to adjust the capacitive elements. This is not the same as the claimed limitations which specify that the capacitive array is adjustable through use of a

plurality of programmable data storage elements, not a single programmable data storage element. As such, the proposed combination of Shen, McCarthy, and Smith does not teach the limitations of Claim 1. Claims 2, 3, 5, and 37-39 are dependent upon the allowable Claim 1 and are therefore similarly allowable.

Claim 8 is directed toward a circuit formed as part of a single integrated circuit, the circuit comprising a first amplifier, a first oscillator, a first mixer coupled to the first amplifier and the first oscillator, a second oscillator, a second mixer coupled to the second oscillator, a second amplifier coupled to the second mixer, a serial control module, an intermediate frequency filter (IF filter), the IF filter including a first filter stage, the first filter stage including a first LC resonator, the first filter stage further including a first adjustable capacitor array coupled to the first LC resonator, the first adjustable capacitor array having an effective capacitance value adjustable through use of a first plurality of programmable data storage locations, the first plurality of programmable data storage locations programmable through the serial control module, and wherein the second mixer is coupled to the IF filter and the IF filter is coupled to the first mixer. For at least the same reasons as those described above in regard to Claim 1, the independent Claim 8 is allowable over Shen in view of McCarthy in view of Smith. Claim 9 is dependent upon the allowable Claim 8, and is therefore similarly allowable.

Conclusion

The Applicant respectfully submits that the above claims are in a condition for allowance, and allowance at an early date would be appreciated. If the Examiner has any questions or comments, the Examiner is encouraged to call the undersigned at (408) 530-9700 to discuss them so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,
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